PROJECT TITLE: Nitrate Reduction by Controlled Fermentation.

PERIOD COVERED : March 1st - 21st, 1980

WRITTEN BY : C. Ruf

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1. Trial Nino 55.

During this trial the US RL feedstock was extracted and the extract was treated in three different ways:

1) Production of 125,2 kg of non fermented but concentrated extract.

2) Production of 143 kg of fermented, concentrated extract with Ninomass.

3) Production of 105,3 kg of fermented, concentrated extract without Ninomass.

These three extracts left the pilot plant in sterilized stainless steel drums on March 11th and were sent by air-freight to the RL pilot plant in Richmond where they were used to produce three different sheets.

Analytical data of the extracts are attached (appendice 1).

During trial 3, part of the fermented extract (about 200 lt) accidentally run through the fermenter a second time. This part of the extract received the nutrient additives twice and was subsequently discarded. It was interesting to observe that despite this incident, we were able to continue the fermentation without any problems. This shows that the system is very robust.

A mass balance of this trial is being worked out.

2. Pilot plant.

See monthly report of March 1980 "Pilot Plant Operations" by C. Ruf.

3. Nino/RCB trials.

A meeting took place on March 18 in order to evaluate the analytical results of the Nino/RCB trials 4 and 5. Conclusion were that the samples were not representative and that these trials have to be repeated. (Ref. 1)

See also monthly report March 1980 "Reconstituted Tobacco II" by A. Robbiani.

4. Nitrate reduction of strips.

See monthly report March 1980 "Unit Operations II" by P. Karbacher, N. Luthy.

5. Ninomass.

On March 20th, P. Karbacher and J. Brosy went to Aeromatic in Basle in order to dry some samples of Ninomass in a fluidized bed dryer. (Ref.2).

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6. Miscellaneous.

On March 20th, Messrs. D. Karrer and E. Guazzone from Chemap visited Neuchâtel to discuss the preparation of a scale up study for the Nino process application in Park 500. This study will be based on data from Richmond for one RL line.

PROCESS DEVELOPMENT

C. Ruf

Ref. 1) "Minutes of the meeting of March 18, 1980", F. Moser
Ref. 2) "Compte rendu de l'essai de séchage de Ninomass chez Aéromatic à Bâle", P. Karbacher, March 31, 1980.

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App. 1

Nino 55: Analytical Results

A) Extracts	$N\text{-}NO_3$	RS	$N\text{-}NH_3$	TA	PO_4^{---}	SO_4^{--}	CA^{++}	K^{+}	Mg^{+}	Viscos.	PH	Dens.	Refrac. Index	TS	$N_{tot.}$
	g/l	g/l	g/l	g/l	g/l	g/l	g/l	g/l	g/l	cP		g/l		%	g/l
Non fermented, concentrated extract	15.2	48.2	3.8	21.2	7	11	10	82	6	176	4,6	1.279	1.416	44.6	19.1
Fermented, concentrated extract with Ninomass	0.06	4.5	0.58	6.2	138	36	14	52	3	4864	3,4	1.308	1.418	57.9	11.7
Fermented, concentrated extract without Ninomass	0.02	16.7	0.40	16.9	135	41	17		6	2560	4,3	1.282	1.409	47.0	20.2

B) Tobacco	$N\text{-}NO_3$	RS	$N\text{-}NH_3$	TA	PO_4^{---}	SO_4^{--}	HWS
	%	%	%	%	%	%	%
Feedstock	1.02	4.5	0.2	1.07	0.75	1.05	45.9
Washed feedstock	0.06	0.4	0.02	0.12	0.45	0.55	13.5

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